Report No. 85:03

PREDICTING TEACHER EFFECTIVENESS: A FINAL REPORT ON A PROPER LINEAR REGRESSION APPROACH TO SELECTION FOR TEACHER EDUCATION IN BRITISH COLUMBIA

GRANT NUMBER: MG 102

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PROJECT SITE OR SAMPLE: Three Universities in British Columbia

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Predicting Teacher Effectiveness: A Final Report on a Proper Linear Regression Approach to Selection for Teacher Education in British Columbia

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Financial support for this project was provided through a grant from the Educational Research Institute of British Columbia.

Abstract

Universities training teachers have a responsibility to schools and to those applying to their pre-sevice programs to select the best applicants for training. This study examines validity of an instrument, the Human Relations Incident (HRI), designed to predict the effectiveness of pre-service applicants. Subjects were rationally selected based on their HRI scores, from student teachers at three universities in British Columbia. Low and high scoring students were chosen. Their teaching effectiveness was assessed by analysis of faculty practicum reports and, in a longitudinal study, through observation, self report, and student evaluation during their first teaching years. High scorers were found to exhibit more effective teaching behaviours during practicum ($p<0.10$) such as appearing confident, being imaginative, showing respect, being flexible, showing committment to teaching, and having good communicative skills. In their first years of teaching, high scorers on the HRI also tended to score consistently high on a systematic observation instrument. The significance of findings from the

longitudinal study was seriously affected by subject attrition. Government changes to educational funding resulted in very few subjects being hired to teach. Further research is needed to confirm the indications that high scorers on the HRI will exhibit more effective teaching behaviours in their professional practice. Because of the inescapably personal nature of effective teaching, a case study approach is recommended for this further study.

Teacher Effectiveness

Research on teacher effectiveness has traditionally focused on teaching methods, on teachers' knowledge and teachers' overt behaviour, yet neither empirical reseach nor common sense support the belief that successful teaching is possible only through use of some specific methodology (Hamachek, 1975). Nor is knowledge alone a sufficient discriminator with which to predict teacher effectiveness (Ellena, Stevenson & Webb, 1961; Barr, 1961). Although researchers have attempted to indentify behaviors characteristic of effective teachers (Dunkin & Biddle, 1974; Medley, 1977) this approach has caused problems because of the failure of agreement on what constitutes "effective" behaviour and because of inadequacies in methodology.

In Medley's review of teacher effectivenesss he addresses the difficulty of measuring effectiveness considering the complex nature of teaching, concluding that "the longer the period over which student change is measured, the more likely it is that the change measured will be lasting and important" (Medly, 1979, p.17). Medly further claims that it is the teacher who produces permanent changes who deserves to be called effective.

Unfortunately, all of these fundamental, and long lasting effects of schooling may not become apparent in the time span of the one year (or one semester) shared by the student and

the teacher who plays an important role in eliciting that change. This is one of the seldom addresssed weaknesses of process-product research.

Doris Ryan (1984) has noted that all educational researchers should be aware of the limitations of their conceptual frameworks: "The meaning of the research findings must be derived from the initial assumptions about teaching and learning. If the phenomena and the connections between them have been inappropriately or inadequately conceptualized, the empirical findings may be difficult to interpret and may yield implications taht are inappropriate in improvement efforts" (p.2). By making these initial assumptions explicit, researchers can contribute to a fuller appreciation of their work.

Perceptual Psychology

In 1959, a year-long seminar at the University of Florida studied teacher effectiveness. Their studies were based on the theory that teachers must be thinking, problem-solving people whose primary tool in putting into operation their knowledge and understanding is themselves.

Following this seminar a series of researchers at the University of Florida investigated the perceptual differences between good and poor helpers in teaching (Combs, 1964; Gooding, 1965), couselling (Combs & Soper, 1963b), and the

Ministry (Combs et al, 1969). In more than ten studies, perceptual characteristics have been demonstrated to differentiate effective from ineffective teachers.

Out of this research came a description of the distinguishing beliefs held by professional helpers. They can be characterized as:

1. having an internal (emphatic) or an external frame of reference;
2. having a people or things (events, subject matter) orientation;
3. perceiving others as being able (capable of dealing with their own problems) and dependable or as unable and undependable;
4. perceiving others as friendly (seeing others as well-intentioned) or as unfriendly and hindering;
5. perceiving others as worthy (possessing dignity and integrity) or unworthy.

The self as instrument concept (Combs, 1969) helps to explain why the attempt to determine teacher effectiveness criteria on the basis of knowledge of methods in process/product research falters. Each person is unique and functions in a unique way in the classroom. An attempt to evaluate teachers on the basis of common behaviours can at best provide only a low statistical relationship.

A perceptual view of effectiveness offers promise for useful research findings for the identification and evaluation

of effective teaching. The major roadblock to the implementation of the findings of perceptual research has been the difficulty in evaluating perceptual orientations. Combs, Avilia, and Purkey (1971), Combs and Soper (1963a) and Parker (1966) have demonstrated that to try to determine self-concept on the basis of self-report is unreliable. Information about an individual's perceptions cannot be determined by direct processes. Observation of a subject's behaviour can only record external events; the internal thoughts and beliefs that accompany the behaviours must still be inferred. Nor can an individual disclose directly his or her underlying perceptual field. Very often self-report will be influenced by how an individual believes he or she is expected to behave. Therefore, as perceptions are internal to persons, they are only accessible by means of some form of external reference. An external reference used in this study is the Human Relations Incident (HRI).

The Human Relations Incident

In 1977 Wasicsko examined the criteria growing out of the Florida studies and developed the Human Relations Incident (HRI) whereby raters could be trained to make inferences about teachers' perceptual orientations. The HRI instrument is designed to determine:

1. how persons see themselves;
2. how they see others;
3. perceptions of purpose;
4. overall frame of reference.

In use, students are asked to describe an important past event in their lives according to the following instructions:

Human Relations Incidents

I would like you to think of a significant past event which involved yourself in a helping role with one or more other persons. That is, from a human relation standpoint, this event should have special meaning to you. In writing about this event, please use the following format:

1. *Describe the situation as it occurred at the time.*
2. *What did you do in the particular situation?*
3. *How did you feel about the situation at the time you were experiencing it?*
4. *How do you feel about the situation now? Would you wish to change any part of it?*

The Human Relations Incidents are then scored according to the Perception Rating Scale (See Appendix A).

The scores on each factor can be added together to come up with a total score. The maximumn possible total is 28, and the minimum possible is 4. In general, a total score

between 18 and 28 indicates perceptions which have been demonstrated to be characteristic of effective teachers. A score between 4 and 14 indicates perceptions which have been demonstrated to be characteristic of ineffective teachers. A score between 14 and 18 can indicate several things:

1. The subject has perceptions that are intermediate on the scale;
2. the subject's perceptions are not appropriately coded by the scale;
3. Not enough information was given to permit inferences about the underlying perceptions of the subject (Wasicsko, 1977, p.113).

Combs and Soper (1963a) found that perceptual raters independently rating Human Relations Incidents agreed with both themselves and other raters in excess of 83 per cent of the time.

They also found that when subjects wrote four HRI's over the course of a year, ratings based on those HRI's were stable over time with rater agreement being 0.80. Studies by Vonk (1970) and Dedrick (1972) support the findings of Combs and Soper.

The HRI Perceptual Rating Scale was proven reliable at 0.86 using a two-tailed T test (Wasicsko, 1977).

Because this is a high inference scoring system it demands trained raters. Wasicsko (1977) developed a training manual whereby researchers could become skilled in scoring the

HRI.

In evaluation of this type, scores will vary even among highly trained raters. In perceptual research, the criterion of acceptability is that the raters (three or more) agree to within one point a minimum of 80 percent of the time.

It is the purpose of this study to determine predictive validity of the HRI.

Application

Admissions Screening For Teacher Education

In 1981, under the direction of Shapson at Simon Fraser University, a research project was undertaken to study the criteria which selection commitees should consider when choosing among applicants to pre-service teacher education programs. Out of the survey of the literature that was undertaken as part of this study, three major approaches to admission decision-making became apparent:

1. The CLINICAL or JUDGMENTAL approach is charactericzed by a clinician reviewing each applicant's admissibility on the basis of information gleaned through such means as interviews, application forms, letters of reference, and/or tests (McArthur, 1954; Super, 1957; and Goldman, 1971).
2. The PROPER LINEAR REGRESSION approach uses a mechanical

method of combining information about an applicant. Dawes (1979) defines a proper linear model as one in which the ideal teacher is empirically derived and information about the candidate is compared mechanically to the ideal.

3. The IMPROPER LINEAR APPROACH is similar to the second except that it does not utilize optimal weighing of criteria.

In a comprehensive review of the literature comparing clinical versus proper linear prediction, Meehl (1954) found that the latter approach has consisitently proven superior. Similar findings are well documented in the literature by Goldberg (1965), Gough (1962), Sawyer (1966), and Hirschberg and Itkin (1978).

The procedures used to develp and validate prediction equations in the linear regression approach may explain its source of superiority. First, a JOB ANALYSIS is conducted which examines tasks involved, working conditions, and responsibilities. Secondly, SPECIFICATION occurs which entails an examination of the experiences, education, and skills an applicant must bring to the job (Sayles & Strauss, 1981).

From this analysis, a set of criteria are selected to evaluate an individual's performance on tasks identified in the job analysis. In teacher education, the criteria typically employed include one or more measures of teaching success. It is important that the criteria have high

measurement validity and reliability (Cronbach, 1970).

At the same time as the criteria are being selected in the proper linear approach, predictors are also selected. Once the predictor variables have been selected, measures of these predictors are obtained. The next procedure involves measuring the applicant, in this case the prospective student-teacher, on the critierian measures. When both the predictor and criterion are available, their relationships are assessed statistically and the index of the relationship is expressed as a correlation coefficient.

In Turner's (1977) overview of research in teacher education, he rated "selection-work success' as studies high in importance to teacher education because they have the potential to identify the talent inputs needed to optimize teacher work success outputs. However, the number of studies examining teacher selection from this standpoint are very minimal. Indeed, there appear to be no long term, predesigned studies in the field.

This study proposes to fill that need by using the Human Relations Incident developed out of the Florida Studies as the criterion predictor needed in a proper linear approach to pre-service candidate selection.

Methods and Description

It was the purpose of the study to provide teacher training institutes with a valid and reliable proper linear regression approach to applicant screening. This approach is based on empirical findings relating specific selection criteria to effective teaching in the field as outlined in the introduction. The specific selection criteria used in this study were derived from the perceptual charateristics demostrated by effective teachers in the Florida Study (Combs, et al., 1971).

The Perceptual Rating Scale was used to measure reponses obtained from student teachers to the Human Relations Incident (Wasicsko, 1977) and provided the predictive data. Data concerning subject teaching effectiveness were gathered by a number of means both during and after preservice training practicums.

Collecting the HRI

Students attending Simon Fraser University, Univeristy of British Columbia, and the University of Victoria, and entering a one year professional development pre-service program were asked to particiapte in the study. The students had a minimum of two years university level study and were entering the Faculty of Education in either the elementary or secondary programs.

Each volunteer student teacher (n=500) completed a Human Relations Incident Report which was scored by the researcher and two trained research assistants. HRI samples were randomly selected and scored by all three scorers to provide a reliability check. There was an agreement of scores (plus or minus one point) 91 per cent of the time which is well above the reliability level deemed necessary by Wasicsko (1977).

Rational selection (Good, Biddle, & Brophy, 1975) was used to choose those students who would serve as subjects for the rest of the study. Those student teachers scoring high (18 and over) and those scoring low (less than 15) were selected (Wascisko, 1977, p.113).

Determining Predictive Validity

To test the validity of the HRI as an instrument with which to predict student teaching success in the practicum a Pearson product moment correlation was calculated using the HRI score and grades obtained for practicum teaching. No significant relationship was found between these two variables.

Grades are, in any case, a very coarse measure of student performance in practicum. They are determined by other factors than simply teaching behaviour, for example, university policies. A finer measure was required that would allow the researchers to compare actual teaching behaviours during the practicum with the perceptions of the student

determined by the HRI score. To meet this need, categories of descriptors were developed from the final reports written on the students' teaching performance by university personnel and by the school teachers in whose classrooms the students trained. Recurring comments from the reports were noted and then grouped according to underlying concepts and behaviours. A single descriptor was selected to identify the particular common quality or behaviour in each case. These descriptors were then collected on a checklist which was used by the researchers to quantify the data contained in the reports. (Appendix B contains examples of the checklists developed for this study.)

Each report was read and when the descriptor or any of the words or phrases associated with it were found, the appropriate category was checked. For example, if a report stated that the student teacher had "showed a lot of positive energy in class," then the descriptor "enthusiastic" would be checked. In this way more specific information than could be contained in a simple grade was recorded. The decision to develop checklists was made after a pilot study conducted at Simon Fraser University in 1981. It was found then that a clear and differentiating pattern of descriptors kept appearing for both the high and low scoring groups.

The reports from the three universities were checked by two researchers and their tallies compared to obtain a measure of across rater reliability. The scores for each item were

then broken down into tallies found among the high and low scorers on the HRI. A statistical test of proportions was then done to determine whether either group received more tallies in that descriptor group than might have been expected by chance.

The Longitudinal Study

During the year after the subject groups completed their pre-service training, several follow-up studies were undertaken in an attempt to discover whether the HRI continued to predict effective teaching behaviours during the first years of professional practice. The subjects were followed by letter, mailed questionaire, telephone, and some were observed teaching.

A major obstacle to this further research was encountered at this time. Political changes in the province's funding of education resulted in severe cuts to local school board budgets which in turn drastically reduced the hiring of new teachers. Very few of the subjects of this study found employment as teachers, most carrying on with their education or seeking employment outside of teaching. The number of subjects was reduced to such an extent that the collection of further data was most difficult and the likelihood of finding significant results was drastically altered.

Instrumentation

The effectiveness of teachers remaining in the study was determined by using a combination of teacher self-report, student evaluation of their teacher, and systematic observation. An attempt to develop checklists of descriptors similar to those developed from student teaching reports but based on supervisors' reports from the field was thwarted as no such reports were available.

Teacher Self Report and Systematic Observation. The Profiles of Teaching Competency (Wassermann & Egert, 1976) were used as a basis for both the teacher self-report instrument and the systematic observation form. (See Appendix C.) Wassermann and Egert's instrument was developed to give some functionally meaningful criteria for judging teaching competency, and evolved out of eight years of assessing student teaching performance in a classroom context (p. 70).

The instrument, developed from both practical on-going school based experience and from an intensive examination of other instruments, reflected the values, both theoretical and practical of the authors. Clear among those values is an acceptance of the philosophy of Raths (eg: Raths, Wassermann, Jonas, & Rothstein, 1967). One of the instruments used to form a backbone of the Profiles was a much earlier version developed by Raths and Wassermann.

One of the reasons for selecting this instrument was that after examination, it seemed to the principal researcher to be

the best one of its kind, reflecting the widest range of important teacher behaviours, and growing out of a true understanding of teaching. A second reason was that although the theoretical foundation of this instrument is based on the work of Raths, and the base of this study is the works of Combs and Soper, both have a similar general frame of reference. It is our belief that this compatibilty of theoretical bases is essential in choosing an instrument which is intended to measure specific aspects of teaching deemed, by the nature of the endeavour, as important.

The Profiles were adapted in such a way as to insure that each of the categories measured by the HRI reappeared as part of the behaviours to be scored on the observational Profile sheet.

Whether used as observation instrument or self-evalution instrument, the Profiles were scored similarly. Each item was marked on the following scale:

Consistently Seen	Frequently Seen	Occasionally Seen	Rarely Seen

A final category, "No opportunity" was also included. All marks made in this final category were treated as missing data and, in the case of observations, where there was consistently no opportunity to observe the listed behaviours, that entire item was deleted from the scoring. The values of three, for "Consistently Seen", to zero for "Rarely Seen", were assigned, and these values were averaged to produce a score out of three

for each separate cluster of teaching behaviours. The maximum for the instrument was 33.

Teachers observed were seen once by a team of two to three observers. Scores were averaged from all instruments used.

The importance of systematic observation as a reliable means of studying teaching cannot be denied (Rosenshine & Furst, 1973). What was also of interest in this study was determining whether or not an observation instrument designed for evaluation can be used effectively as an instrument of self-evaluation, and checking the reliability of this high inference instrument for systematic observation.

Student Evaluation of Teachers. Two instruments adapted to different grade levels were developed that reflected the perceptual basis of the study. They were used to determine whether the students could report the ways in which their teacher perceived them, that is for example, as either able or unable. Each instrument contained fifteen items. The K to 6 instrument was answered by circling "Yes" or "No" answers to a list of descriptions of teacher behaviours, while the 6 to 12 instrument asked students to identify which one sentence of a pair of sentences best described their teachers (See Appendix D for examples of these instruments). The behaviours the students were asked to comment on were selected by the researchers to be reflective of certain teacher attitudes found in effective teachers.

These attitudes were:

1. Attitude towards self (identified or unidentified);
2. Attitude towards students (able or unable);
3. Attitude towards teaching (large or small perspectives)
4. Teacher's orientation (people or things).

These instruments were administered by one of the researchers while the teacher was out of the room. They were scored and the results averaged to produce an indication of student perceptions of teacher behaviour.

Findings

The Checklists

It may be one of the perils of working with such complex phenomena as effective teaching behaviours that researchers, in an attempt to define and delimit the boundaries of behaviour, at the same time rule out of court the very essentials they hope to capture. Deciding from the beginning that effectiveness will reside in teacher behaviours, research may never notice, for example, that student motivation plays a major role, so busy is everyone looking at the teacher. This study attempts to avoid that peril by using more unfocussed

attempts at data collection. In doing so, the other peril of research, relatively soft data, has been encountered.

The average agreement on the checklist scoring from the student teaching reports, calculated by taking the mean of all item by item correlation coefficients, was 0.30. There was no consistent difference between the list that contained 23 fairly specific descriptors and those with few and general broader descriptors. An item by item check gave the results shown in Table 1.

Table 1

Items of Comparible Rater Agreement

	Rapport		Independent
HIGH	Enthusiasm	LOW	Respectful
AGREEMENT	Confident	AGREEMENT	Poor Communicator
(r>0.70)	Positive	(r<0.10)	Flexible
			Hard Working
			Knows Subject

A glance at this table shows little obvious difference between the two categories of rater agreement items. We can assume that raters recognized these descriptors themselves when they were found in observer evaluations, so that source of error can be discounted. In fact, that some descriptors appeared exactly in the reports may account for some of the agreements shown. "Developed good rapport" and "Showed great enthusiasm for teaching" are comments that were often found on the reports scored and so were fairly straightforward to identify.

Hidden factors such as these may account for some of the higher agreements. The low agreement items are harder to characterize. They are not obviously items demanding higher degrees of inference to identify, and identical comments did appear on the evaluation reports studied. It may be that different raters in their checking of the documents followed personal inference protocols such as, "If the student managed to do all that, he must be hard working." These protocols could be the source of unreliability in the low agreement items.

The results of the item by item test of proportions are presented in the following table. Those descriptors which appeared less often than was expected for a group are noted as less likely in Table 2.

Table 2

Disproportionately Coded Teaching Behaviours

LOW SCORERS	DESCRIPTOR	HIGH SCORERS
Unless otherwise noted p is less than 0.10		
Less likely	Confident	More Likely
Less likely^	Imaginative	More Likely^
Less likely	Respectful	More Likely
Less likely	Excellent	More Likely
Less likely	Flexible	More Likely
Less likely	Committed	More Likely
Less likely	Has good control	More Likely
Less likely	Needs classroom management	More Likely
More Likely	To have a sense of humour	Less likely
More Likely^	To be a poor Communicator	Less likely^

^ *p less than 0.05.*

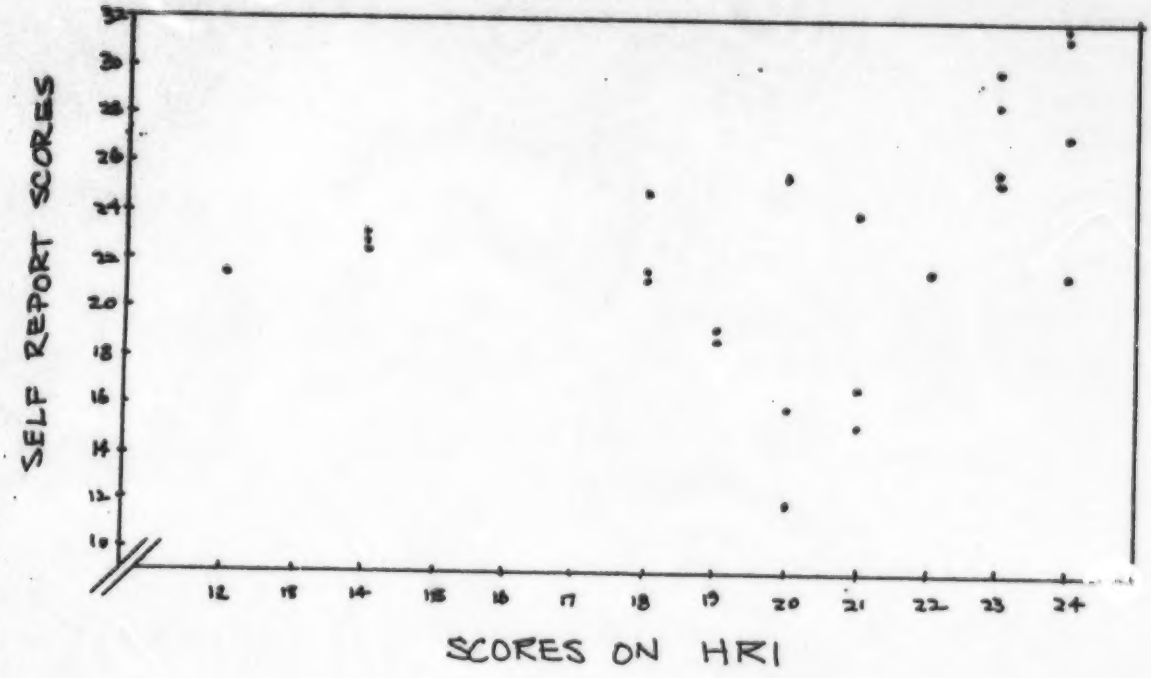
Self-Reports

Virtually all the self reports received were from members of the high scoring group on the HRI. Too few low scoring members returned the self-observation instrument, even after several follow-up telephone calls, to permit meaningful inclusion in the analysis. Enough high scorers did complete the form and return it to permit some analysis of the data. The results are summarized in Table 3.

Table 3

Scattergram showing the relationship between

Scores on the HRI and Self-Observation Scores



A relationship between high scorers and their self-observation scores was shown to exist ($p<0.05$). Those people who score higher on the HRI tend to rate their teacher performance higher than those who score lower. This relationship is moderately strong (r 0.547).

There were three self-observation reports received from members of the low-scoring HRI group, too few to permit statistical analysis. Their scores on the observation

instrument were much higher than would be predicted by extrapolating from the relationship found in the high HRI group. No relationship was found when all scores for both high and low scorers were taken as one group.

Systematic Observation

Kendal's *tau* was used to assess the observer agreement obtained among observers viewing the same teacher and ranking his or her behaviours on the instrument. The results were surprisingly low. The mean agreement coefficient for the nine observer comparisions possible was 0.44. (s.d. 0.26).

The teachers observed were divided into two groups according to their scores on the HRI. This produced one group (n 4) of low scorers and another group of high scorers (n 6). The stem and leaf diagram in Table 4 shows the observation scores in each of these groups.

Table 4

Stem and leaf comparison of observation scores.

LOW HRI SCORERS		HIGH HRI SCORERS
	2	
	2	1.5
9.5	1	9.1 5.3 8.3 5.0
2.7 1.4	1	
M= 12.0	0	8.3 M = 16.25
SD= 6.19		SD= 4.59
7.4	0	
Stem: tens Leaf: units. tenths		

A one-way ANOVA was used to test for a significant difference between the group means. The difference, which is in the expected direction, the low scorers showing fewer effective teaching behaviours, is not significant at the 0.05 level.

Student Evaluation of Teaching

Only eight subjects were found who were teaching and willing to allow their students to complete the student evaluation of teaching behaviour instruments. Of these eight teachers, six were high scorers on the HRI and the remaining two were low scorers, and of those two, only one was teaching in a regular classroom situation while the other worked as a volunteer. Descriptive statistics for the two groups are included below, but because of the uneven group size, the very small sample available, and the small difference of group means, the researcher did no further analysis.

Low Scorers	High Scorers
Mean: 11.9	Mean: 10.6
S.D.: 1.0	S.D.: 1.0

Teachers Hired

A final pragmatic test of the predictive power of the HRI score was done at the end of the study. The students who had been hired as teachers were divided into two groups according to their HRI scores and the proportion of students getting jobs in the low group was compared with the proportion of low scorers in the total population who would have been seeking jobs at the end of their pre-service training. The result showed that a lower percentage of low scoring students (21%) had been hired than might be expected from their proportion of the total sample (27%) ($p<0.001$).

Conclusions

More students who score high on the HRI get jobs in teaching than would be predicted from their proportion of pre-service teachers. That is to say, those hiring new teachers found something about high scorers on the HRI during the selection process, either from resumes, reports, letters of recommendation, or interviews, that disposed them to hire a greater proportion of these applicants compared to low scoring

collegues.

It is interesting to speculate on why this might be so. The study has shown that there is no correlation between HRI score and grades for practicum teaching. School personnel hiring new teachers would not be guided in their selection by consistently higher grades. However their decisions are made, they form a very practical test for the HRI as a predictor of teaching success. We can assume that if more high scorers are hired to teach, they have apparent qualities that suggest they will be effective teachers.

We can predict that during practice teaching high scorers are more likely to exhibit the following characteristics than low scorers:

They appear confident.

They use imaginative teaching methods.

They are respectful.

They are more likely to be excellent teachers.

They are flexible.

They are committed to teaching.

They have good classroom control.

They have good communication skills.

They are less likely to:

show a sense of humour

be organized and good managers.

Low scoring groups show the reverse of these tendencies.

Of these results, the only unexpected one is the failure of high scorers on the HRI to show a sense of humour in their teaching. It may be that at this early stage of their classroom careers, their commitment to teaching is so intense that any humour is buried. Or it may be that supervisors of this group are more forcibly struck by other qualities and neglect humour in their reports. These speculations do not explain, however, this unanticipated result.

On the basis of this list of tendencies demonstrated by students during their practicum teaching, we can conclude that, though there is no correlation to grades, a high HRI score does predict the appearance of some more effective teaching behaviours during the practicum.

These tendencies are generally those predicted by perceptual psychology. Low scores are more concerned with things than people and focus more on immediate, small goals, than on larger goals. This theory hypothesizes that they would be less likely to be flexible in class because not only would the planned lesson be more important than student reactions, but the immediate goals of the lesson would be more important than modifications to suit student's reactions. In the same way, the theory would predict that high scores would be more concerned with their students and the larger goals of their education, and

so the details and importance of classroom organization and management would be neglected. These hypothesized results have been supported by this study.

The support cannot be regarded as conslusive, however, and several explanations of this point arise. The tendencies were not consistently found in the reports from the three universities covered by the study. The differing priorities of these universities and the different evaluation forms used may well contribute to this inconsistency.

Both the University of Victoria and the University of British Columbia use evaluation forms that direct their supervisory personnel to comment on student's achievement in specific areas. Simon Fraser University, on the other hand, provides a broader guide for comment that refers only to general areas of competance. Where the first specifically directed forms require comment on a number of facets of teaching, the Simon Fraser form encourages comment in specific areas but does not require it. A result is that unless some feature of the student's performance is particularly striking, it might not be commented on. In contrast, the forms with more specific direction ensure that student performance in the specified areas will receive comment.

Further differences undoubtedly arise through differing instructions in the use of the forms and different areas of emphasis in the universities. Simon Fraser University focusses on teacher-pupil interactions and concern for individual

students. The University of British Columbia focuses more on planning, preparation, and direct instruction. University of Victoria is concerned largely with the development of specific teacher competencies and skills. The forms which provided the data used to develop the checklists used in this study are also the forms used by the three universities to evaluate progress in their respective programs and so naturally vary as the programs vary.

That some consistency of concern emerges between the three institutions is good evidence that the behaviours discussed are indeed central to effective teaching.

The results of the longitudinal study can only be viewed as exploratory due primarily to the severe subject attrition. Very few teachers were being hired during the period of restraint in educational spending, and that resulted in great subject attrition. Despite this attrition, a number of suggestive results that warrant further research emerges.

The most important aspect of the data arising from the observational study is the consistency of the scores on the observation instrument found among the high scoring group. There is one extremely low outlying value in this group that when removed leaves virtually no variance in scores. The scattering of the observation scores of those students scoring below 14 on the HRI may be important. There is a strong suggestion that a high score on the HRI will predict effective professional functioning, while a low score has little

predictive power. The outlying value in the group scoring above 17 on the HRI may represent a particularly interesting individual case or miscalculation or experimental error.

The data also supports the conclusion that there is a moderately strong positive relation between high HRI score and scores on the self-report instrument. The relationship is again in the hypothesized direction with high scorers reporting more effective teaching behaviours on the Wassermann and Egert based instrument. The teasing data from the three subjects scoring low on the HRI cannot be formally analyzed, but it suggests that low HRI scorers do not score themselves in the same way as higher scorers do. There is no way of knowing whether there is a relationship among the low scoring group or what the reasons for the three higher self-report scores might be. They may see themselves as practising all the effective behaviours they report or, we can speculate on the basis of their perceptual field, they may be suspicious of reporting their real evaluation of their own performance. One low scorer on the HRI annotated liberally his self-report instrument noting, for example, that his students were not capable of discussion when marking that he allowed them frequent opportunities for discussion. It is difficult to imagine what the talks would be like in that classroom, but they would have to be very different from those in a class whose teacher enjoyed and actively encouraged student talk. Low scorers on the HRI may conceal their true thoughts about their own performance or they may interpret their

performance in class differently than a high scorer would. Further research is needed here.

The lack of data from teaching members of the low scoring group during this study is in itself suggestive. We can speculate that their greater concern with small goals makes it unlikely that they will see participation in research on teaching as desireable. What further influence their perceptions will have on their effectiveness and further professional development as teachers also remains an area for future research.

Implications

There is clear evidence in this study that student-teacher perceptions as measured by the HRI affect behaviours exhibited in teaching practicums. This verifies Combs' theory that people's self-concept, view of others, and their knowledge of the world are shaped by their perceptions, and that this personal field of perceptions, in its intermediate position between reality and action, will profoundly affect their behaviour. For example, a teacher who sees others as basically able will view his or her role differently from a teacher who sees others as unable and untrustworthy. An able student can be encouraged to grow toward autonomy and self-direction while an unable student must be trained to behave and think properly. It

should be clearly evident that those different perceptions will produce teachers with very different teaching styles.

The conclusions of this study further suggest that people who see others as able will develop a teaching style that incorporates more of the effective teaching behaviours found on the Wassermann and Eggert evaluation instrument.

Additional support is given to Combs' theory by the unexpectedly high proportion of teachers hired during the study who had scored high on the HRI. In the hiring procedures used, supervisory personell must have found these high scorers more likely to become effective in their new jobs.

However, because the number of subjects hired during the study was so very low due to the drastic government cuts in education spending, it would be necessary to do further research to determine whether the effects of these differing perceptual fields persist throughout a teaching career. The exploratory results in this study, coming from the small number of subjects available, suggest that such further research is warranted.

When research examines teacher effectiveness from the point of view of "teacher as instrument", that is from the perspective that the teacher's attitudes and beliefs are the most important factor in determining that teacher's effectiveness, the measuring of that effectiveness becomes very problematic. A particular "method" cannot be simply observed, for part of the hypothesis of such a study is that no such universally effective method exists. Effective teachers will develop a personal and

individual method arising from their perceptions of themselves, their students, and their work. No preconceived set of criteria for effectiveness of the objective nature demanded by low inference observation, can be used. Any such preconceived criteria will not permit a discernation of the complex and unique qualities of a particular teacher's style, thereby making impossible the study of the very thing that such research sets out to examine. Any study that hopes to further understanding of the teacher as instrument must be designed to allow the individual analysis of a teacher's perceptions as the source of behaviour.

It is in consideration of these factors that we recommend a case study approach to this problem, using two high HRI scorers and two HRI low scorers as subjects, and following them in their teaching careers. This study would provide the flexibility to identify the differing attitudes, reactions, and methodologies that these teachers would develop. In fact this case study research is being planned for January, 1985.

The results of the study reported here are significant enough to suggest that HRI scores be considered upon a student's application to pre-service teacher training. Acceptance committees could use these scores in differentiating between students who are close candidates in other areas, such as experiential background, references, and academic achievement. The HRI procedures could also be used as an interview strategy in the selection process. This has been done by the principal

researcher and has been very effective in gaining insight into student attitudes concerning self, students, and goal orientation.

Moreover, if a student showed a deficiency in one area such as not perceiving students as able, but seemed a positive candidate for teaching in other ways, it would be possible, given adequate program flexibility, to design a program for that student which would ensure learning experiences which might change that student's perceptions of others. Further research in this approach to program design is also needed.

Appendix A

Perceptual Rating Scale

PERCEPTUAL RATING SCALE

RATER_____ DATE_____ PROTOCOL #_____

PERCEPTIONS OF SELF:

IDENTIFIED	UNIDENTIFIED
The teacher feels a oneness with all mankind. He perceives himself as deeply and meaningfully related to persons of every description.	The teacher feels generally apart from others. His feelings of oneness are restricted to those of similar beliefs.

7 6 5 4 3 2 1

PERCEPTIONS OF OTHERS:

ABLE	UNABLE
The teacher sees others as having capacities to deal with their problems. He believes others are basically able to find adequate solutions to events in their own lives.	The teacher sees others as lacking the necessary capacities to deal effectively with their problems. He doubts their ability to make their own decisions and run their own lives.

7 6 5 4 3 2 1

PERCEPTIONS OF PURPOSE:

LARGER:	SMALLER
The teacher views events in a broad perspective. His goals extend beyond the immediate to larger implications and contexts.	The teacher views events in a narrow perspective. His purposes focus on immediate and specific goals.

7 6 5 4 3 2 1

FRAME OF REFERENCE:

PEOPLE	THINGS
The teacher is concerned with the human aspects of affairs. The attitudes, feelings, beliefs, and welfare of persons are prime consideratons in his thinking.	The teacher is concerned with the impersonal aspects of affairs. Questions of order, management, mechanics, and details of things and events are prime considerations in his thinking.

7 6 5 4 3 2 1

Appendix B

University of British Columbia Checklist

Enthusiasm

Rapport

Professional

Organized

Empathic

Good Control

Flexible

Accepts Criticism

Knows Subject

Improved

Needs Management

Excellence

University of Victoria

Good Communicator

Rapport

Flexible

Enthusiastic

Aware/Sensitive/Perceptive

Growth Shown

Committed

Good Preparation and Planning

Reliable

Good Management

Confident

Sincere

Positive

Self-evaluative

Warm

Imaginative

Sense of Humour

Calm

Independent

Excellence

Respectful

Needs Management Skills

Poor Communicator

Simon Fraser University

Established Rapport

Developed Sense of Respect

Flexible

Enthusiastic

Competent

Sensitive

Committed

Enjoys Teaching

Good Sense of Humour

Hard-working

Showed Growth

Good Planning

Needs Management

Appendix C

Observation Form

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

Profile of Teacher Behavior

Special thanks to Selma Wassermann who created the original profile from which this questionnaire was developed.

DIRECTIONS

This profile identifies some observable characteristics of teacher behavior which are considered fundamental to good classroom teaching. Its purpose is to help the teacher to evaluate his own teaching performance. Although the data will be documented for research purposes, it will never be used for any other purpose other than self-evaluation. All remarks are confidential and teachers are urged to be as honest as they can be in rating themselves.

In the final section of the profile, there is a category entitled "Additional Comments." In this section, you are asked to note other specific behavioral characteristics which you consider important and which are not included in this profile.

1. ORGANIZING, INITIATING, DIRECTION	CE	FS	OS	RE	NO
1.1 I see to it that the students are physically comfortable in the classroom.					
1.2 I give clear directions for student activity.					
1.3 I make my purposes clear to my students.					
1.4 I organize activities effectively.					
1.5 I make the classroom a vital and stimulating place.					
1.6 I adjust smoothly to unexpected situations.					
1.7 I provide opportunities for students to learn by doing, seeing, touching, smelling, intuiting, as well as by listening.					

Comments:

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

2. INFORMING, EXPLAINING AND SHOWING HOW

	CE	FS	OS	RE	NO
2.1 I use vocabulary appropriate to students' understanding.					
2.2 I present factual material in a clear and articulate manner.					
2.3 I use the chalkboard effectively.					
2.4 I use a variety of materials and do not rely on a single sheet.					
2.5 I welcome alternate solutions to problem situations.					
2.6 My methods vary and are appropriate to my objectives.					

Comments:

3. UNIFYING THE GROUP

	CE	FS	OS	RE	NO
3.1 I provide opportunities for interaction among students.					
3.2 I involve students in planning activities.					
3.3 I am sensitive to students' inattention and boredom.					
3.4 I foster respect for individual differences.					
3.5 I avoid the use of threat, ridicule, and humiliation.					
3.6 I avoid partiality towards attractive individuals.					
3.7 I help to resolve conflict among students.					
3.8 I ask questions fairly, according to the abilities and interests of students.					

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

Comments:

4. DIAGNOSING INDIVIDUAL LEARNING PROBLEMS

	CE	FS	OS	RE	NO
4.1 I reassure students who exhibit signs of anxiety.					
4.2 I acknowledge students' comments and responses to questions.					
4.3 I watch for signs of physical ill health.					
4.4 I adapt my teaching to the different abilities and rates of learning of each student.					
4.5 I am sensitive to hostile behavior and attempt to deal with its causes.					
4.6 I allow students the opportunity to learn in a style natural to them, even when it differs from my own preferred teaching mode.					

Comments:

5. DEVELOPING THINKING SKILLS

	CE	FS	OS	RE	NO
5.1 I adopt an open, non-dogmatic manner in discussions with students.					
5.2 I emphasize the development of cognitive skills rather than mere accumulation of information.					
5.3 I allow time for students to reflect, weigh alternatives and suspend judgment.					
5.4 I do not insist on a single, "correct" answer in working out solutions to problems.					

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

Comments:

6. EVALUATION

	CE	FS	OS	RE	NO
6.1 I provide opportunties for self-evaluation.					
6.2 My evaluative methods vary and they are appropriate to my objectives.					
6.3 I use evaluation as a diagnostic tool for enchancing students' learning.					

Comments:

7. MEETING EMOTIONAL NEEDS

	CE	FS	OS	RE	NO
7.1 I attempt to make each individual feel important and accepted.					
7.2 I ensure that each student experiences some measure of success.					
7.3 I remember to praise students' work when it is deserving.					
7.4 I am warm and kind in my relationships with students.					
7.5 I avoid sarcasm and other forms of rudeness in my relations with students.					
7.6 I trust students as having the capacity to deal with their own problems.					

Comments:

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

8. CLARIFYING VALUES, ATTITUDES AND BELIEFS

	CE	FS	OS	RE	NO
8.1 I provide opportunities for students to discuss ideas which have relevance to their lives.					
8.2 I accept the expressed attitudes, beliefs, values of students, even when they differ from my own.					
8.3 I spend as much time in developing attitudes as in teaching factual material.					

Comments:

9. ATTITUDE OF INQUIRY

	CE	FS	OS	RE	NO
9.1 I inquire into the backgrounds of my students.					
9.2 I inquire into the nature of the community.					
9.3 I seek an exchange of ideas with other teachers.					
9.4 I seek to broaden my grasp of the curriculum.					

Comments:

10. PERSONAL

	CE	FS	OS	RE	NO
10.1 I get along well with other staff members					
10.2 I have a pleasant and cheerful manner.					
10.3 The students have a high regard for me.					
10.4 My behavior may be described as ethical.					
10.5 My behavior may be described as mature and thoughtful.					
10.6 I display a sense of humour.					

CE = consistently evident; FS - frequently seen; OS = occasionally seen;
RE = rarely evident; NO = no opportunity

Comments:

11. SCHOOL - COMMUNITY

	CE	FS	OS	RE	NO
11.1 I make use of community resources in my teaching.					
11.2 My teaching is relevant to the lives of the children and their experiences in the community.					
11.3 I participate in and contribute to school-wide activities.					

Comments:

Appendix D

Student Evaluation Instruments

Student Evaluation Form

Kindergarten to Grade 6

Instructions to Researcher

Questions to be read aloud to children in grades Kindergarten to Grade 6. They will have a coloured sheet for each question with YES NO printed on it, and they will be asked to circle either the "yes" or the "no" on each card.

---

1. Does Mr./Ms. _____ excited when he/she is teaching you?

2. When one of the kids is having a bad day does Mr./Ms. _____ help the kid to feel better?

3. Does Mr./Ms. _____ think that you do your best work most of the time?

4. Does Ms. _____ let you talk about yourselves in this class?

5. Does Mr./Ms. _____ laugh with you when things are funny?

6. Does Mr./Ms. _____ try to help all the kids to like learning?

7. Does Mr./Ms. _____ mind if you quietly help each other to understand the work?

8. Does Mr./Ms. _____ think that you're good kids?

9. Does Mr./Ms. _____ forget that kids have feelings too?

10. Does Mr./Ms. _____ want you to be happy in this class?

11. Does Mr./Ms. _____ show you how the things you learn in school can be useful?

12. Does Mr./Ms. _____ tell kids that they'd better shape up when they're upset?

13. Is Mr./Ms. _____ happy with the way you work?

14. Does Mr./Ms. _____ like to listen to you when you talk about what you do at home?

15. If you came in late would Mr./Ms. _____ listen kindly as you told why?

Student Evaluation Form

Grade 7-12

Read each pair of sentences. Put a check in the box beside the sentence that best describes your teacher.

☐ 1. A. This teacher is most concerned about my grade in this subject.

☐ B. This teacher is most concerned that I enjoy learning all about this subject.

☐ 2. A. This teacher is happiest when we are all listening to her/him with no interruptions.

☐ B. This teacher is happiest when we all get involved in a discussion of the subject.

☐ 3. A. On the whole, this teacher is pleased with our assignments.

☐ B. On the whole, this teacher is disappointed with our assignments.

☐ 4. A. This teacher knows something about me as a person.

☐ B. This teacher knows only about me as a student.

☐ 5. A. This teacher shares his/her sense of humour with us.

☐ B. This teacher is too busy with the job of teaching to share her/his sense of humour with us.

☐ 6. A. This teacher is most concerned that I learn everything about this subject so I'll get a good grade.

☐ B. This teacher is most concerned that I like this subject so that I'll be able to use it.

☐ 7. A. When someone in the class is having a bad day, this teacher puts no pressure on them.

☐ B. When someone in the class is having a bad day, this teacher makes them shape up.

☐ 8. A. This teacher believes that we can all do at least part of the assignments.

☐ B. This teacher believes that some students will not be able to do anything.

9. A. This teacher deals only with the required material for this course.

   B. This teacher sometimes talks about the real world.

---

10. A. This teacher, would be most upset if a student's feelings were hurt.

    B. This teacher would be most upset if a textbook was lost.

---

11. A. This teacher wants us to like this subject as we learn it.

    B. This teacher is totally concerned with our learning the facts.

---

12. A. This teacher feels that time spent on kids' personal problems is time wasted.

    B. This teacher feels that kids' personal problems are worth attending to.

---

13. A. This teacher trusts that we are giving this course our best shot.

    B. This teacher feels that it is unwise to trust people of our age.

---

14. A. In our classes with this teacher, he/she deals only with the subject to be taught.

    B. In our classes with this teacher she/he has shown that he/she cares about whether we will make it in the real world.

---

15. A. This teacher would be most concerned if I wasn't sure how I felt about an issue.

    B. This teacher would be most concerned if I wasn't sure where I'd put my homework.

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POOR

QUALITY

ORIGINAL